

WE CLAIM:

1. A method of making an absorbent nonwoven web, comprising:
  - a) producing a mass of thermoplastic substantially continuous sheath-core or side-by-side multicomponent filaments by entraining molten thermoplastic polymers into a first air stream and drawing and containing the filaments in a fiber distribution unit;
  - b) introducing an absorbent material via a second air stream into the fiber distribution unit at a point above a divergence zone of the mass of filaments in the fiber distribution unit;
  - c) allowing the mass of filaments and absorbent material to mix in the fiber distribution unit and collecting the mixture onto a forming wire in a uniform distribution of filaments and absorbent material;
  - d) running the collected mass of filaments and absorbent material through a heater at a time and temperature sufficient to soften the sheath of the filaments; and
  - e) densifying the softened mass of filaments and the absorbent material.

2. The method of making an absorbent nonwoven web of Claim 1, further including passing the collected mass of filaments and absorbent material through a heater at a time and temperature sufficient to fully activate the sheaths of the multicomponent filaments to a liquid state and densifying the heated mixture at a pressure and time sufficient to contact at least a majority of the pulp fibers to the fully activated mass of multicomponent filaments.

3. The method of making an absorbent nonwoven web of Claim 1, further including cooling the densified mass of filaments and absorbent material.

4. The method of making an absorbent nonwoven web of Claim 1, wherein the substantially continuous multicomponent filaments are spunbond.

5. The method of making an absorbent nonwoven web of Claim 1, wherein the substantially continuous multicomponent filaments are spunbond polyethylene-polypropylene sheath-core filaments.

6. The method of making an absorbent nonwoven web of Claim 5, wherein the substantially continuous spunbond multicomponent filaments crimp upon the application of heat.

7. The method of making an absorbent nonwoven web of Claim 1, wherein the substantially continuous multicomponent filaments are meltblown.

8. The method of making an absorbent nonwoven web of Claim 1, wherein the sheaths of the substantially continuous multicomponent filaments contain polar functional groups selected from the group including: maleic anhydride modified Polyethylene such as EPOLENE C-16, and Polypropylene such as Exxelor PO1020.

9. The method of making an absorbent nonwoven web of Claim 1, wherein a core material of the substantially continuous spunbond multicomponent filaments is selected from a group including polyester (PET or PBT), nylon or Polypropylene.

10. The method of making an absorbent nonwoven web of Claim 1, wherein a sheath material comprises a wettable polymer selected from a group consisting of polyvinyl acetates, saponified polyvinyl acetates, saponified ethylene vinyl acetates, and combinations thereof.

11. The method of making an absorbent nonwoven web of Claim 1, wherein the mixture comprises an absorbent in about 5-97% by weight of the pulp fibers and about 3-95% by weight of the substantially continuous multicomponent filaments.

12. The method of making an absorbent nonwoven web of Claim 1, wherein the mixture comprises an absorbent in about 35-95% by weight of the pulp fibers and about 5-65% by weight of the substantially continuous multicomponent filaments.

13. The method of making an absorbent nonwoven web of Claim 1, wherein the mixture comprises an absorbent in about 50-95% by weight of the pulp fibers and about 5-50% by weight of the substantially continuous multicomponent filaments.

14. The method of making an absorbent nonwoven web of Claim 1, wherein the mixture comprises an absorbent in about 5-90% by weight of a superabsorbent material.

15. The method of making an absorbent nonwoven web of Claim 14, wherein the mixture comprises an absorbent in about 10-60% by weight of the superabsorbent material.

16. The method of making an absorbent nonwoven web of Claim 14, wherein the mixture comprises an absorbent in about 20-50% by weight of the superabsorbent material.

17. The method of making an absorbent nonwoven web of Claim 1, wherein the step of introducing a plurality of an absorbent via a second air stream into the fiber distribution unit at a point above a divergence zone of the mass of filaments in the fiber distribution unit occurs in the drawing zone of the fiber distribution unit at a point where the filaments have not hardened.

18. The method of making an absorbent nonwoven web of Claim 1, wherein the step of introducing a plurality of an absorbent via a second air stream into the fiber distribution unit at a point above a divergence zone of the mass of filaments in the fiber distribution unit occurs above the point of cyclonic airstream formation in the fiber distribution unit.

19. The method of making an absorbent nonwoven web of Claim 1, further comprising: activating the sheaths of the filaments at between 160°F - 300°F, for about 0.5 to about 20 seconds.

20. The method of making an absorbent nonwoven web composite of Claim 1, wherein the forming wire bears the collected mass through the heater.

21. An absorbent article comprising:

- a) a cover sheet serving as the exterior layer of the article;
- b) a top sheet serving as the interior layer of the article;
- c) a primary liquid retention layer having:

- i) a mass of thermoplastic substantially continuous at least partially sheath-core multicomponent filaments having a plurality of absorbent particles in a uniform distribution of filaments,

- ii) with a majority of the absorbent particles joined to sheaths of the multicomponent filaments by hardened flow joints; and

- iii) the primary liquid retention layer further being a densified web.

22. The absorbent article of Claim 21 wherein the primary liquid retention layer is a densified web of from about 0.05 g/cc to about 0.5 g/cc.

23. An absorbent nonwoven web comprising:

- a) a mass of thermoplastic, substantially continuous, at least partially sheath-core, multicomponent filaments having a plurality of absorbent particles in a uniform distribution throughout the mass of filaments;
- b) with a majority of the absorbent particles joined to sheaths of the multicomponent filaments by hardened flow joints; and
- c) the mass of thermoplastic, substantially continuous, at least partially sheath-core, multicomponent filaments with the plurality of absorbent particles in a uniform distribution throughout the mass of filaments further being densified.